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METAL-CERAMIC ALLOY FOR PACKING GAS TURBINES, (U)  
JUL 77 Y N SEMENOV, G L DUBROV  
FTD-ID(RS)T-1206-77

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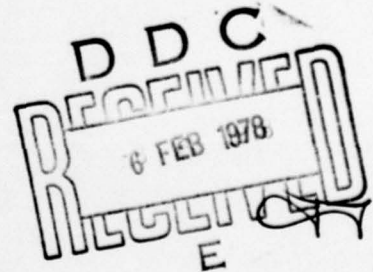
## FOREIGN TECHNOLOGY DIVISION



METAL-CERAMIC ALLOY FOR PACKING GAS TURBINES

by

Yu. N. Semenov, G. L. Dubrov,  
N. A. Kazantseva



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## EDITED TRANSLATION

12 7p.

14 FTD-ID(RS)T-1206-77

11 28 Jul 1977

6 MICROFICHE NR:

74D-77-C-000945

METAL-CERAMIC ALLOY FOR PACKING GAS TURBINES,

10 Yu. N./Semenov, G. L./Dubrov, N. A.  
/Kazantseva

English pages: 2

Source: USSR Patent Nr. 195635, 4 May 1967, PP.  
1

Country of origin: USSR

Translated by: Gale M. Weisenbarger

Requester: ASD/ETID

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21 Edited Trans. of Patent (USSR) 195 635  
P 1, 4 May 67, by Gale M. Weisenbarger.

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А а	<b>А а</b>	A, a	Р р	<b>Р р</b>	R, r
Б б	<b>Б б</b>	B, b	С с	<b>С с</b>	S, s
В в	<b>В в</b>	V, v	Т т	<b>Т т</b>	T, t
Г г	<b>Г г</b>	G, g	У у	<b>У у</b>	U, u
Д д	<b>Д д</b>	D, d	Ф ф	<b>Ф ф</b>	F, f
Е е	<b>Е е</b>	Ye, ye; E, e*	Х х	<b>Х х</b>	Kh, kh
Ж ж	<b>Ж ж</b>	Zh, zh	Ц ц	<b>Ц ц</b>	Ts, ts
З з	<b>З з</b>	Z, z	Ч ч	<b>Ч ч</b>	Ch, ch
И и	<b>И и</b>	I, i	Ш ш	<b>Ш ш</b>	Sh, sh
Й й	<b>Й й</b>	Y, y	Щ щ	<b>Щ щ</b>	Shch, shch
К к	<b>К к</b>	K, k	Ъ ъ	<b>Ъ ъ</b>	"
Л л	<b>Л л</b>	L, l	Ы ы	<b>Ы ы</b>	Y, y
М м	<b>М м</b>	M, m	Ь ь	<b>Ь ь</b>	'
Н н	<b>Н н</b>	N, n	Э э	<b>Э э</b>	E, e
О о	<b>О о</b>	O, o	Ю ю	<b>Ю ю</b>	Yu, yu
П п	<b>П п</b>	P, p	Я я	<b>Я я</b>	Ya, ya

\*ye initially, after vowels, and after Ъ, ь; e elsewhere.  
 When written as ё in Russian, transliterate as yë or ë.  
 The use of diacritical marks is preferred, but such marks may be omitted when expediency dictates.

## GREEK ALPHABET

Alpha	A	α	•	Nu	N	ν
Beta	B	β		Xi	Ξ	ξ
Gamma	Γ	γ		Omicron	Ο	ο
Delta	Δ	δ		Pi	Π	π
Epsilon	E	ε	•	Rho	Ρ	ρ •
Zeta	Z	ζ		Sigma	Σ	σ •
Eta	H	η		Tau	Τ	τ
Theta	Θ	θ	•	Upsilon	Υ	υ
Iota	I	ι		Phi	Φ	φ •
Kappa	K	κ	•	Chi	Χ	χ
Lambda	Λ	λ		Psi	Ψ	ψ
Mu	M	μ		Omega	Ω	ω



# RUSSIAN AND ENGLISH TRIGONOMETRIC FUNCTIONS

Russian	English
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sin	sin
cos	cos
tg	tan
ctg	cot
sec	sec
cosec	csc
sh	sinh
ch	cosh
th	tanh
cth	coth
sch	sech
csch	csch
arc sin	$\sin^{-1}$
arc cos	$\cos^{-1}$
arc tg	$\tan^{-1}$
arc ctg	$\cot^{-1}$
arc sec	$\sec^{-1}$
arc cosec	$\csc^{-1}$
arc sh	$\sinh^{-1}$
arc ch	$\cosh^{-1}$
arc th	$\tanh^{-1}$
arc cth	$\coth^{-1}$
arc sch	$\operatorname{sech}^{-1}$
arc csch	$\operatorname{csch}^{-1}$

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rot	curl
lg	log

## GRAPHICS DISCLAIMER

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# METAL-CERAMIC ALLOY FOR PACKING GAS TURBINES

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Metal-ceramic alloys are known which consist of nickel and boron nitride. At high temperatures, however, they adversely affect the properties of adaptability of the packing material to fitting.

The suggested alloy is distinguished by the fact that for increasing its heat resistance silicon is introduced into its composition in the limits of 2-3 o/o and the remaining components are taken in the following percentage relationship: nickel 90-93 and boron nitride 4.5-7 which is supplementarily heat treated at a temperature of 2100-2200°C.

The heat-treated boron nitride powder is mixed with electrolytic nickel and silicon powders and then they are subjected to pressing, sintering, repressing and repeated sintering at a temperature of 1100° C for two hours.

The experiments which were conducted showed that during supplementary thermal processing of boron nitride the heat resistance of the new metal-ceramic packing material for gas turbines increased considerably.

#### OBJECT OF THE INVENTION

Metal-ceramic alloy for packing gas turbines containing nickel and boron nitride is distinguished by the fact that for increasing the heat resistance silicon was introduced into its composition in the limits of 2-3 o/o and the remaining components were taken in the following percentage relationship: nickel 90-93, and boron nitride 4.5-7      supplementarily heat treated at a temperature of 2100-2200°C.



REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
ETD-ID(RS)T-1206-77		
4. TITLE (and Subtitle)		5. TYPE OF REPORT & PERIOD COVERED
METAL-CERAMIC ALLOY FOR PACKING GAS TURBINES		Translation
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s)		8. CONTRACT OR GRANT NUMBER(s)
Yu. N. Semenov, G. L. Dubrov, N. A. Kazantseva		
9. PERFORMING ORGANIZATION NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
Foreign Technology Division Air Force Systems Command U. S. Air Force		
11. CONTROLLING OFFICE NAME AND ADDRESS		12. REPORT DATE
		4 May 1967
		13. NUMBER OF PAGES
		2
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report)
		UNCLASSIFIED
		15a. DECLASSIFICATION DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report)		
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